

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

Docket No: Q54431

Toshiro HAYAKAWA, et al.

Appln. No.: 09/315,068

Group Art Unit: 2828

Confirmation No.: 5982

Examiner: Jeffrey N. Zahn

Filed: May 20, 1999

For: SEMICONDUCTOR LASER AND METHOD OF MANUFACTURING THE SAME

**PRELIMINARY AMENDMENT**

Commissioner for Patents  
Washington, D.C. 20231

Sir:

Prior to examination, please amend the above-identified application as follows:

**IN THE CLAIMS:**

**Please enter the following amended claims:**

1. (Amended) A semiconductor laser comprising an active region which includes at least a quantum well layer and upper and lower optical waveguide layers on opposite sides of the at least a quantum well layer, the active region being formed of  $\text{In}_x\text{Ga}_{1-x}\text{As}_y\text{P}_{1-y}$  ( $0 \leq x \leq 1$ ,  $0 \leq y \leq 1$ ), and upper and lower cladding layers formed of AlGaAs on opposite sides of the active region, wherein the improvement comprises that

at least one of the optical waveguide layers is not smaller than  $0.25\mu\text{m}$  in thickness, and  
a part of the upper cladding layer on the upper optical waveguide layer is selectively removed up to the interface of the upper cladding layer and the upper optical waveguide layer.

**Please add the following new claim:**

7. (New) A semiconductor laser as defined in Claim 1, wherein said at least a quantum well layer is one quantum well layer.

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